Claim 86: The composition of claim 85, wherein said at least one additional polypeptide has an amino acid sequence consisting of the amino acid sequence set forth in SEQ ID NO: 8, 9 or 10.

Claim 87: The isolated polypeptide of claim 74, consisting of an amino acid sequence set forth in SEQ ID NO: 1.

F1 cont

REMARKS

Applicants wish to thank the examiner for the courtesy extended to their representatives during the December 11 telephone interview. This interview is believed to have been extremely helpful in addressing the pending issues.

Claims 82 and 83 have been cancelled, and replaced by claims 85 and 86, which are believed to address the rejection under 35 USC § 112, second paragraph, at point 10 of the office action. Claim 87 is drawn to subjection matter described in the specification. SEQ ID NO: 1 presents, *inter alia*, the amino acid sequence of NY-ESO-1, which is discussed in the application.

Applicants are also submitting the front page of U.S. Patent No. 6,251,603, "Method For Determining Status of A Cancerous Condition By Determining Antibodies to NY-ESO-1 In A Patient Sample." Only the first page is being submitted in order to minimize the size of this telefaxed response. If the examiner requests a complete copy it will be sent; however, it is believed that the examiner can access the patent via PTO records.

The patent is cited to show that ESO-1 is known to be processed, in vivo, into peptides which complex with Class-II molecules. Were this not the case, antibodies would not be generated, in vivo, and there would be no response to the assays that are clearly enabled. Hence, ESO-1 is clearly a protein processed to Class-II presented peptides.

In the course of the interview, the written description rejection was discussed. Applicants pointed out that the motif they describe as being essential to HLA-DR53 binding was, in fact, established by Futaki, *et al.*, *Immunogenetics* 42:299-301 (1995). It was established that Futaki, *et al.*, is of record.

Review of Futaki, *et al.* will show that many peptides are described which are shorter than those claimed, but which do, in fact, satisfy the binding motif for HLA-DR53 binding. See, e.g., Table 1 of Futaki, *et al.* It should also be noted that apart from the recited binding motif, there is no pattern to the sequences of the binding peptides.

Such is also the case for the peptides specifically disclosed herein, which do, in fact, satisfy the claims. This is a key point, because the rejection appears to be based on the proposition that specific sequences are not described.

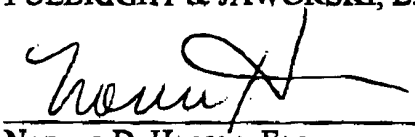
There is a finite number of amino acids. Admittedly, it would be tedious and tiresome to write all variations out, one could, nonetheless do so. Further, applicants have shown disparate peptide sequences satisfy the claims. Hence, it is not seen how the written description requirement is not satisfied.

The examiner raised an issue with respect to the upper limit of the claimed peptides; however, it is pointed but that Futaki, *et al.*, describe peptides as short as 11 amino acids, and as long as 17, which do in fact bind HLA-DR53. The lengths recited by applicants are not unreasonable, in view of the showing of what is known in the art.

In view of the foregoing, withdrawal of all rejections, and allowance of this application is believed proper, and is urged.

Respectfully submitted,

FULBRIGHT & JAWORSKI, L.L.P.



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(12) **United States Patent**
Jäger et al.

(10) **Patent No.: US 6,251,603 B1**
(45) **Date of Patent: Jun. 26, 2001**

(54) **METHOD FOR DETERMINING STATUS OF A CANCEROUS CONDITION BY DETERMINING ANTIBODIES TO NY-ESO-1 IN A PATIENT SAMPLE**

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(73) Assignee: **Ludwig Institute for Cancer Research**, NY (US)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

(21) Appl. No.: **09/359,503**

(22) Filed: **Jul. 23, 1999**

Related U.S. Application Data

(63) Continuation-in-part of application No. 09/165,546, filed on Oct. 2, 1998, which is a continuation-in-part of application No. 09/062,422, filed on Apr. 17, 1998, which is a continuation-in-part of application No. 08/937,263, filed on Sep. 15, 1997, which is a continuation-in-part of application No. 08/725,182, filed on Oct. 3, 1996, now Pat. No. 5,804,381.

(51) **Int. Cl.**[7] **C12Q 1/68**; C12P 19/34; G01N 33/566; C07H 21/04; C07K 16/00

(52) **U.S. Cl.** **435/6**; 435/7; 435/91.2; 435/287.2; 436/501; 536/24.33; 530/350; 530/387.1

(58) **Field of Search** 435/6.7, 91.1, 435/91.2, 183, 810, 287.2; 436/501, 94; 530/388.1, 324, 387.1, 350; 536/23.1, 23.5, 24.31, 24.33

(56) **References Cited**

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(57) **ABSTRACT**

The invention relates to methods for determining tumor status by determining antibodies specific to NY-ESO-1 in patient samples. One can determine whether a cancerous condition is progressing, regressing, or remaining stable by determining antibodies against NY-ESO-1 in a patient sample, and comparing the value obtained to a prior value. When the tumor in question expresses NY-ESO-1, a change in this value is indicative of a change in status of the cancerous condition.

21 Claims, 3 Drawing Sheets